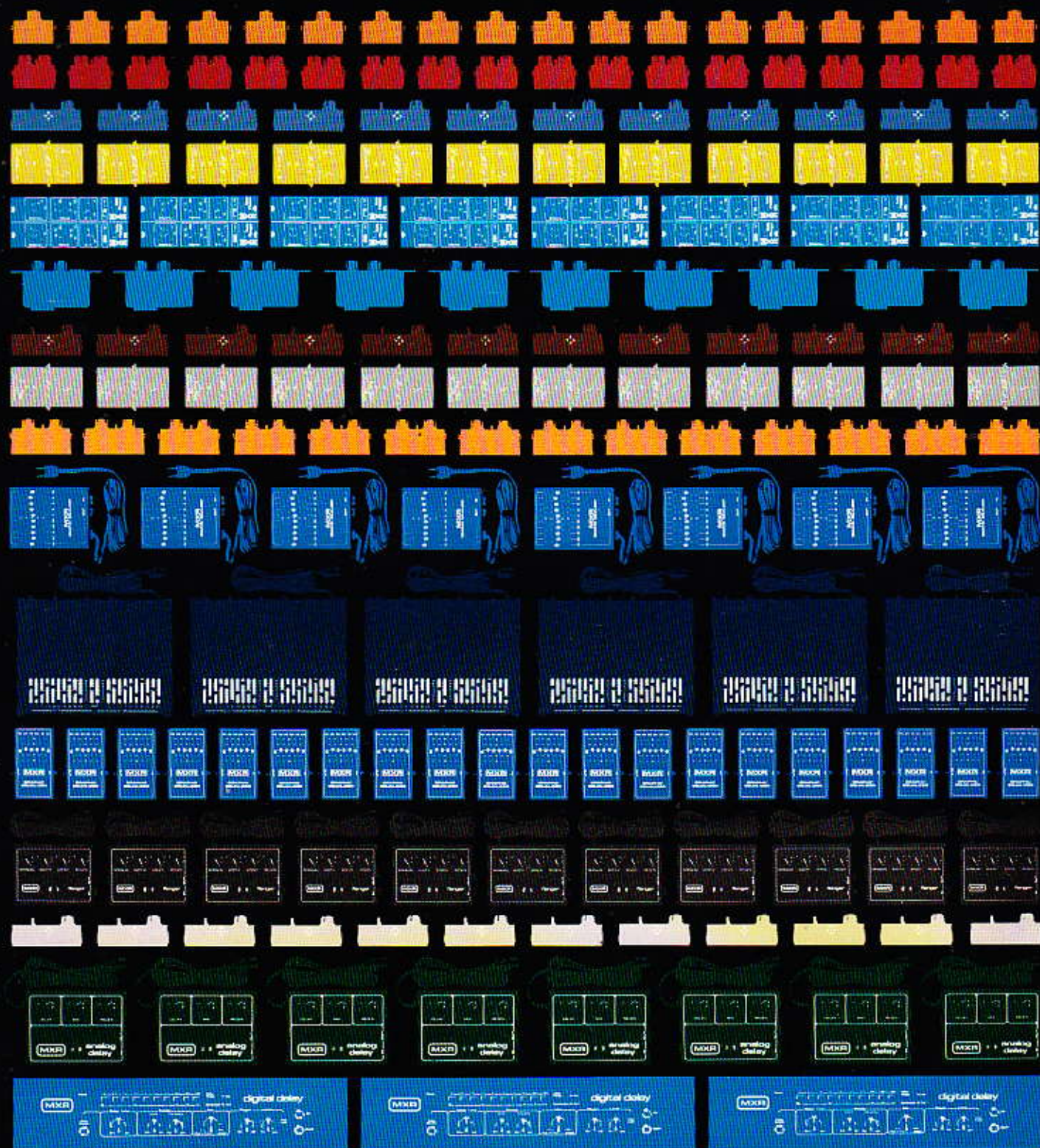


# MXR Professional Products Catalog





## Introduction

Signal processing has come a long way since the sixties. Today a musician finds his accessories to be as essential to his performance as the instrument he plays. With this in mind, we at MXR have created the most complete line of signal processing devices available to any musician or recording engineer. Our goal has always been to provide well engineered products at a moderate price. You won't find any gadgets or gimmicks in this catalog. Each MXR product has always been a legitimate studio effect designed and packaged to be easily integrated to on-stage performance. Our first motto of "Studio Sounds" is as valid today as when we produced our first phase shifter.

We have never made trade offs at MXR. No product will ever be introduced until it has met predetermined specifications for noise, battery life, and ruggedness. When you buy an MXR product, you can be sure that it will provide years of continuing performance, and we back that up with a thorough warranty policy.

MXR has made a commitment to itself, its customers and the future of the music industry—that is to continue as the leader in the field of electronic signal processing.

**MXR Innovations, Inc.**  
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## Phase 90

The MXR Phase 90 is the classic phasing unit. Designed for use with any electronic musical instrument, the Phase 90 provides low cost, studio-type phasing for on stage use. The Phase 90's operation is simple and fool-proof. A continuously variable speed control allows you to select a wide variety of phase shifted effects, (including a rotating speaker type of sound). The rugged footswitch allows you to switch in and out of the effect.

The Phase 90 has virtually led the way for the acceptance of Phase shifting as a legitimate musical effect. Its small size (4 1/4" x 2 1/4"), rugged die-cast housing, and destruction defying controls combine with its low noise and wide frequency response characteristics to make it the ideal tool for the creative musician.

### Specifications:

Input Impedance	0.5Meg ohm
Output Impedance	10K ohm
Insertion Loss	0
Frequency Response	40Hz—20KHz
Dynamic Range	90dB
Power Source	9V Dry Cell

## Phase 45

Carefully designed to provide the utmost in basic phase shifting that is immediately accessible in performance, and yet extremely cost-effective, the Phase 45 is the most basic of MXR's self-contained phasing systems, and the ideal unit for a musician looking for the best and the most affordable.

Operation is simple and reliable. The variable speed setting allows you to achieve a wide variety of effects, including a rotating speaker type of sound, and a rugged footswitch enables you to switch in and out of the effect instantly.

The MXR Phase 45 is housed in the same rugged casing as all of our other self-contained effect units. It is designed to be the utmost in affordable, basic phasing and yet withstand years of onstage and studio use.

### Specifications:

Sweep Speed	.1Hz—10Hz
Sweep Range	3 octaves
Signal to Noise Ratio	90db
Input Impedance	500K ohm
Battery Drain	~0.5ma.





## Phase 100

The MXR Phase 100 represents the current state-of-the-art in phase shifting, and is without peer in the industry. With ten stages of phasing, its applications are virtually limitless. The Phase 100 is the first self-contained phasing unit to offer programmable phase shifting, through two independently adjustable controls, Speed and Intensity. The Intensity control allows for adjustment of sweep width and notch depth, two important parameters relevant to phase shifting. In addition to adjusting width and depth, the intensity control also provides regeneration in its second and fourth positions.

Application possibilities, too, are immense. The Phase 100's low noise and high overload point allow you to use it with musical instruments, and most studio and PA systems, without distortion.

The unit is ruggedly built, and compactly housed in a die-cast aluminum case with switches and knobs that defy destruction. All of this combines with an extremely long battery life (six months in normal use) to make the Phase 100 the ultimate in portable, programmable, phase-shifting.

### Specifications:

Maximum Input Level	+5dBv
Input Impedance	500K ohm
Output Impedance	<4K ohm
Frequency Response	20Hz/20KHz
Dynamic Range	100dB
Number of Filters	10
Power Consumption	<14mW





## Blue Box

The MXR Blue Box is a musical synthesizer component which converts an incoming tone into a fundamental waveshape and adds another tone, two octaves below it.

The controls allow you to adjust the blend of fundamental and contrabass tones, as well as the loudness of the synthesizer effect. The MXR Blue Box is best utilized when playing one note at a time, cleanly as possible for clearest sound. The combination of fundamental and contrabass tones gives a guitar an especially full bodied tone, but the Blue Box delivers equally interesting results with other instruments, such as piano or brass instruments.

The circuitry of the Blue Box incorporates the use of CMOS integrated circuits, the latest in digital technology, to provide for the greatest accuracy and reliability in performance. It is housed in the standard MXR case, and designed to withstand years of rugged use.

## Distortion +

The MXR Distortion+ has been designed to allow you to add controlled distortion to your guitar or piano. The Distortion+ has become the best selling distortion unit available today, largely due to the degree of control the musician can exercise over the sound of his instrument.

With the distortion control on the minimum setting, the Distortion+ accentuates the even numbered harmonics creating a sound reminiscent of an over-driven tube amplifier. As this control is increased, the odd numbered harmonics are emphasized, giving a very controllable "fuzz sound" with long sustain. The output control enables you to change the level of the distorted signal to match or contrast with the undistorted signal, and thus further modify your use of the distortion effect in performance. The Distortion+ is very effective in a situation where a musician is looking for a smooth distortion without ear shattering volume.

### Specifications:

Max Gain	40dB
Peaking Frequency	1.2KHz
Max Output Level	-10dBm
Input Impedance	500K ohm
Battery Drain	0.5ma.





## Noise Gate/Line Driver

Playing an amplified instrument inevitably means that your music will be accompanied by a certain amount of hum and noise, which is only amplified and augmented by sound modification devices and stage lighting systems. The MXR Noise Gate/Line Driver was developed to solve the problems of background noise and hum, and provide a convenient high impedance/low impedance interface for direct line taps.

The threshold control on the Noise Gate/Line Driver allows you to adjust the level at which the Noise Gate cuts off, removing unwanted noise between notes and at the end of performances. The Noise Gate function can be switched on and off, to allow for special effects.

The Line Driver function, however, is always active, providing an ideal interface to any low impedance microphone input (such as a studio or PA mixing console) from a high impedance source (such as an instrument pick-up) with no loss occurring in the transformation. A standard phone-jack and a 3 pin XLR connector are provided, to allow for maximum flexibility in the use of such direct taps whenever instrument isolation is desired.

The Noise Gate/Line Driver is the ideal companion for any amplified instrument on the road or in the studio, and is designed to withstand years of rugged use.

### Specifications:

Variable Threshold	-70dBv to -20dBV
Input Impedance	470K ohms
Output Impedance	100 ohms
Maximum Signal Level	+5dBm

## Dyna Comp

The MXR Dyna Comp is a level limiting device created to effectively re-create proper sound balance and long sustain without distortion.

Limiting is an effect which is used on virtually every recording, allowing you to be heard without overpowering everyone else in the group. Properly adjusted, the MXR Dyna Comp will make everything you play come out at an adjustable, pre-set loudness; further adjustment of the sensitivity control will create incredibly clear sustain, without distortion.

The versatility of the MXR Dyna Comp is best understood when played through, and adjusted according to your own playing style and preferences. Your dealer will be more than glad to have you try one out.

The circuitry of the MXR Dyna Comp uses the same electronic techniques found in the latest studio limiters (including the MXR Mini Limiter, one of a series of MXR products designed for in-board studio use), at a fraction of their cost. Controls are easily adjusted, and the unit is constructed to withstand years of rugged, in-performance use.

### Specifications:

Input Impedance	500K ohm
Output Impedance	10K ohm
Maximum Input Signal	-10dBm
Compression Range	40dB
Equiv. Input Noise	-100dB
Battery Drain	~1.2ma.





## Envelope Filter

The MXR Envelope Filter is a professionally designed, competitively priced tone modifier which enables you to create a wide variety of "wa wa" sounds which respond directly to your touch. The MXR Envelope Filter is basically a voltage-controlled low pass filter in which the upper cutoff frequency is controlled by the amplitude or level of the input signal. The louder the signal, the higher the cutoff frequency. The loudness of the signal therefore controls the "brightness" of the sound.

Two controls are provided on the MXR Envelope Filter, allowing for a wide variety of creative applications. The first control, labeled Threshold, varies the sensitivity of the filtering action; i.e. the degree of brightness obtainable from a given input level. Sensitivity increases as the control is rotated clockwise. The second control, labeled Attack, varies the attack time of the filter, i.e. the time required for the cutoff frequency to reach its peak. At full clockwise position, the filter responds almost instantaneously. Counterclockwise rotation of the control gradually lengthens the attack time. Longer attack times serve to create a "wa" at the beginning of each note played.

The MXR Envelope Filter may be used with any electric keyboard or string instrument, including guitar, bass, piano, and clavinet. The Envelope Filter will add variety and expression to both solo and accompaniment performances.

### Specifications:

Maximum Signal Level	0dBv
Dynamic Range	95dB (typical)
Filter Range	150Hz to 3KHz
Power Consumption	12m.w.





# Digital Delay

The MXR Digital Delay is a self-contained audio delay line which utilizes sophisticated technology to achieve a new standard of professional quality performance. The culmination of an intensive design program, the MXR Digital Delay is unparalleled in versatility, ease of operation, and creative application.

Although the MXR Digital Delay is capable of a wide variety of effects, the basic function of the unit is quite straightforward. The input signal is processed through circuitry which delays the signal by a specific amount of time. It is then mixed back with the 'dry' or undelayed signal at the output of the delay. The effect produced will depend upon the amount of delay time chosen. The basic effects that can be obtained by using appropriate portions of the wide delay range provided by the MXR Digital Delay include discrete echoes, vocal doubling, and hard reverberation. In addition to these basic effects, the MXR Digital Delay contains associated circuitry which allows such unique effects as flanging, pitch alterations (vibrato, pitch bending), frequency modulation and infinite (non-deteriorating) repeat-hold.

The MXR Digital Delay employs digital random access memory to produce a time-delayed signal. This technique, derived from computer technology, represents a departure from previous shift register methods. The analog input signal is converted to digital form, stored in the memory circuitry and removed at some designated later time. It is then converted back to analog form and fed to the output.

This method provides the user with the advantages of a wider usable delay range, more precise control of delay time, and preservation of signal quality. The MXR Digital Delay makes available delay times ranging from 0.08msec. to 320msec. (1 second = 1000msec.), fully variable, without excessive noise or mechanical reliability problems. This delay range is expandable to 1280msec., in increments of 320msec., by means of up to three additional plug-in memory boards. These boards are available from MXR and are easily installed by the user.

The MXR Digital Delay is designed for a wide variety of applications including recording, P.A., and amplified musical instruments. The unit is rack-mountable for studio installation, and an optional road case is available for onstage use by the traveling musician.

## Specifications:

Maximum Delay (msec.)

Number of Memory Boards Installed

	1	2	3	4
20KHz	40	80	120	160
10KHz	80	160	240	320
5KHz	160	320	480	640
2.5KHz	320	640	960	1280

Bandwidth Selected





Frequency Response Dry	$\pm 1$ , (20Hz-20KHz)	Residual Noise	greater than 80dB below limit threshold
Bandwidth Selected:		T.H.D.	less than 0.1% near OVER-LOAD level (1KHz)
20KHz	+1, -3dB (20Hz-18KHz)		less than 0.5% near OVER-LOAD level (40Hz-7KHz)
10KHz	+1, -3dB (20Hz-9KHz)	I.M.	less than 0.1% (60Hz/7KHz, 1:1)
5KHz	+1, -3dB (20Hz-4.7KHz)		less than 0.5% (60Hz/7KHz, 4:1)
2.5KHz	+1, -3dB (20Hz-2.4KHz)	Level Matching Range	-20dBm to +15dBm
Input Impedance	200K ohm (balanced, ring or tip to ground)	Regeneration Range	0 to 100%
C.M.R.R.	36dB (typical)	Variable Delay Range	4:1 (continuous)
Output Impedance	100 ohms, designed to work into 600 ohms or higher	Sweep Frequency Range	0.1Hz to 1KHz (two ranges)
Maximum Input Level	+20dBm, LEVEL control past '3 o'clock' or 20dB above limit threshold	Sweep Width	0 to 100% (4:1)
Maximum Output Level	+20dBm (unloaded) +18dBm (600 ohm load) (LEVEL control past '3 o'clock')		





## Analog Delay

The MXR Analog Delay provides a reliable, completely electronic means of simulating echo and reverberation. Continuously variable delay times, from 25 to 500 milliseconds (ms.), are available with a dynamic range greater than 80 dB. A mix control provides adjustment of the ratio between original and delayed signals. A regeneration control allows the user to return a selectable amount of the delayed signal back to the input to be delayed again, thus providing multiple echoes with varying delay times.

Special circuitry within the Analog Delay allows the optimum delay-bandwidth product to be selected. The bandwidth is 10KHz at the shortest delay setting (25ms.). As the delay time is increased, the bandwidth is gradually reduced. At 500ms., the bandwidth is 1KHz. This action yields an audible effect closely simulating the natural reverberation characteristics of a range of room sizes; from a small, live-sounding room to a large auditorium.

The wide range of effects available with the Analog Delay will find applications in many situations from studio recording to live performances.

### Specifications:

Maximum Input Level	+5dBv
Input Impedance	500K ohms
Output Impedance	approx. 100 ohms
Bandwidth: Dry	20KHz
Delayed variable with delay time	1K—10KHz
Dynamic Range	greater than 80dB
Delay Range	25—500ms.





# Flanger

The MXR flanger is the first studio flanger in a compact and durable case designed for live performance applications in severe environments where durability and immediate control by the performer is important.

Recognizing that flanging differs from phasing, the MXR flanger utilizes an actual time-delay, where as phasing does not. As a result, the notches produced by flanging are harmonically related, while those produced by phasing are evenly spaced over the frequency spectrum. The MXR flanger operates according to the time-delay principle and creates at the longest delay time (16 milliseconds) over 150 notches. The audible effect is one of enhanced "tonality."

With the MXR flanger a variety of operating effects can be obtained, ranging from classic flanging, to quivering vibrato. The MXR flanger is designed to accept a wide variety of inputs. Typical applications include: guitar, piano, organ, electric bass and vocal microphones.

## Specifications:

Maximum Input Level	+5dBV
Input Impedance	500K ohms
Output Impedance	1K ohm
Frequency Response	20Hz-20KHz
Dynamic Range	>85dB
Delay Range	.5-16 ms.
Power Requirements	105-125 Volts AC, 50-60 Hz, 9 ma, 1 watt





## Six Band Graphic Equalizer

The MXR Six Band Graphic Equalizer is a simple yet complete tone modifier designed to selectively boost or cut any of six frequency bands. The ability to precisely modify six frequency bands will give you far more control over tonality than conventional "tone controls" or two or three band "frequency boosters."

The six frequencies have been chosen to fit into the tonal response of bass, electric guitar, and piano, allowing the musician to have maximum control over his instrument's sound.

Designed with convenience in mind, the MXR Six Band Graphic Equalizer is battery powered (with battery life of up to one year in normal use) highly compact and ruggedly constructed for long term reliability.

### Specifications:

Control Range	$\pm 18\text{dB}$
Output Impedance	5K ohms
Maximum Output Level	+4dBm
Input Impedance	470K ohms
Dynamic Range	100dB
Frequency Response	20Hz—20KHz $\pm 2\text{dB}$ @ 20dBm
Current Consumption	less than 1ma.

## Ten Band Graphic Equalizer

The MXR Ten Band Graphic Equalizer is a tool ideally suited for clear precise and effortless modification of tonal contours. Ten bands cover the entire frequency spectrum in one octave increments; a gliding touch of a slide control allows you to boost or diminish from the tonality of any specific part of your performance. The difference between using a conventional tone control and the MXR Ten Band Graphic Equalizer has to be heard to be believed.

The MXR Ten Band Graphic Equalizer is AC powered, extremely quiet, and capable of handling both high and low impedance signals. All of this makes for the widest range of applications including musical instrument tonal modification, PA mains and/or monitor equalization, home recording, etc.

The MXR Ten Band Graphic Equalizer is completely portable, yet practically indestructible, designed to withstand years of rugged use.

### Specifications:

Maximum Output Level	+15dBm
Dynamic Range	110db
Frequency Response	30Hz—20KHz $\pm 1\text{dB}$
Control Range	12db Boost—12db Cut
Filter Frequencies	31, 62, 125, 250, 500Hz, 1K, 2K, 4K, 8K, 16KHz
Power	105-125 V.A.C. at 50ma.





## Two Channel Graphic Equalizer

The MXR Two Channel Graphic Equalizer is the result of years of creative engineering at MXR Innovations. Advanced design and construction techniques, and the extensive use of integrated circuits increase reliability and allow for application in many professional situations.

The MXR Two Channel Graphic Equalizer incorporates innovative circuitry that functions as follows:

An active input stage, bridging a balanced line, buffers incoming signals. Next a feedback level control circuit provides up to 12 decibels of broadband boost or attenuation. A differential amplifier, incorporating the filter controls, processes the signal and provides a low impedance output. Equalization occurs at the input of the differential amplifier. Each filter, when in the boost position, increases the gain of the differential amplifier at that filter's frequency. When in the cut position, each filter attenuates the signal and decreases the differential amplifier's gain. When centered, the filters are essentially out of the circuit allowing flat frequency response. Nine filters are active, simulating a series tuned circuit.

Each filter's characteristics, (gain, Q, and frequency accuracy), are more dependable and immune to hum pickup than conventional circuitry employing inductors. The 16KHz filter is a shelving type, and is passive. By dividing the frequency spectrum into ten octave-wide bands, equalization can be performed by ear in a fairly straightforward manner. Once the desired response is obtained, the controls and front panel graphics give an accurate representation of the equalizer's response.

The Equalizer's wide dynamic range and interface characteristics allow for a variety of applications. The frequency response of a system can be tailored to compensate for room acoustics, speaker aberrations and program material. Horizontal control placement and the equalizer's compact case permit easy manipulation in

studio mixdown situation. P.A. applications include: suppression of major feedback frequencies, compensation for high frequency attenuation in miking and rejection of unwanted signals (60 Hz hum and noise). Two channels permit separate main and monitor equalization.

### Specifications:

Dynamic Range	110 dB
Gain	unity $\pm 1$ dB (controls centered)
Control Range	$\pm 12$ dB
Output Impedance	designed to work into 600 ohms or higher
Maximum Output Level	$\pm 15$ dBm
Input Impedance	50K ohms Balanced (Active Input)
Equivalent Input Noise	-95 dBm (typical)
C.M.R.R.	40 dB (typical)
Common Mode Range	$\pm 15$ Volts
Frequency Response	20Hz—20KHz $\pm 1$ dB at 0 dBm
T.H.D.	less than .05% at 0 dBm (20Hz—20KHz)
I.M.	less than .05% at 0 dBm (60Hz/7KHz, 4:1)
Power Requirements	105—125 Volts A.C. at 50 ma.
Weight	4.5 pounds (2.04 kg.)





## Auto Phaser

The MXR Auto Phaser is designed to be the finest phasing unit available for professional applications. The Auto Phaser's low distortion, low noise, and wide range of effects enables it to fill every studio phasing need.

Ease of operation, low power consumption, and wide supply range makes it ideal in any portable mixing or P.A. application.

The subjective audible effect of phasing is a product of a phase-shift created response characteristic resulting in a series of "notches" in the audio spectrum similar to reel flanging, but differing from flanging in the sense that these notches are not harmonically related.

### Specifications:

Gain	Unity $\pm$ 1db
Output Impedance	Designed to work into 600 ohms or higher
Input Impedance	20K ohms Balanced (Active Input)
Maximum Signal Level	+15dBm
Frequency Response	30Hz to 20KHz $\pm$ 1dB
Equivalent Input Noise	-85dBm
Phase Shift	1080°
Center Notch Range	Variable from 100Hz to 10KHz manually, automatically, or via external input
Power Requirements	+15 to +30 Volts D.C. @ 34ma.

## Auto Flanger

The MXR Auto Flanger is the first professional audio delay line capable of producing true flanging—repeatably and economically, designed for both portable use and custom installations, the Auto-Flanger reliably meets the most demanding of professional audio needs.

The front panel layout and control functions are designed to be as versatile as possible while maintaining ease of operation.

Due to the precise mathematical relationship between the time delay and the resulting comb filter response, the Auto Flanger causes random program material (i.e. drums, cymbals, and other percussion) to take on musical tonality, a characteristic not found with Phasing.

### Specifications:

Gain	Unity $\pm$ 1dB
Output Impedance	Designed to work into 600 ohms or higher
Input Impedance	20K ohms Balanced (Active Input)
Maximum Signal Level	+15dBm
Frequency Response	Dry 30Hz to 20KHz $\pm$ 1dB Td 30Hz to 15KHz $\pm$ 2dB
Equivalent Input Noise	Dry—85dBm Td—74dBm
Time Delay Range	.2 to 2 milliseconds (Variable)
Power Requirements	+15 to +30 volts D.C. @ 28 ma.





## Mini Limiter

The MXR Mini Limiter is designed as a cost-effective answer to meeting the wide variety of audio limiter applications.

Its wide supply range, low power consumption, and input-output characteristics enable it to interface with a diversity of equipment, from portable high impedance mixers to custom low impedance consoles.

Low noise, low distortion and quick response enable it to effectively control signal peaks. Attack time is fast (approx. 1ms.), and release time is both variable via rear trim pot and dependent upon the amount of gain reduction. Four instantly responsive L.E.D.'s continuously indicate gain reduction. The Mini Limiter has quick recovery from heavy gain reduction, but approaches maximum gain slowly, a most useful recovery characteristic in application.

### Specifications:

Threshold of Limiting	Variable from -30dBv to +10dBv
Output Level (Limiting)	Variable from -20dBm to +10dBm
Output Impedance	Designed to work into 600 ohms or higher
Input Impedance	50K ohms reference ground provided (active input)
Frequency Response	20Hz to 20KHz $\pm$ 1dB
Noise Level	73dB below threshold
Power Requirements	+15 to +30 Volts D.C. @ 22ma.

## Professional Products Rack

The MXR Professional Products Rack is a compact, self-contained enclosure for mounting, powering, and interfacing up to four Auto Flangers or Auto Phasers in any combination. Its unique power supply design allows operation over a wide range of line voltages.

Packaged in a rugged and attractive case, the Professional Products Rack is designed for standard half-rack mounting. It may also be used in a freestanding configuration for studio effects on location. A versatile control arrangement permits independent operation of each unit or synchronous operation in a wide variety of master-slave combinations. Conveniently grouped phone jacks make it possible for units to be patched individually or in a series. This complete flexibility allows a wide spectrum of creative effects.

### Specifications:

Power Requirements	105-125 Volts AC, 50-60Hz, 65ma, 7.5 watts
Dimensions	Front Panel—7"h. (17.8cm) x 9.5"w. (24.1cm) Mounting Depth—4.5" (11.4cm)
Weight	4.25 lbs. (1.93kg)

